

Listing of the claims:

1. (Currently Amended) An identification tag-(100) for use in a location system (400) for determining the identification tag's-(100) location in a room in a building or areas to be monitored, characterised in that wherein the identification tag-(100) comprises an ultrasonic transducer-(190) connected to a receiver-(180) adapted to receive ultrasonic signals, together with a radio transmitter-(170) connected to an antenna-(195) adapted to transmit an identity radio signals with information containing the identity of the identification tag, and wherein the tag further comprises a calculating unit connected to a control unit arranged to calculate transit time differences for the received ultrasonic pulses.

2. (Currently Amended) An identification tag-(100) according to claim 1, wherein~~characterised in that~~ the ultrasonic transducer-(190) is connected to the receiver unit-(180) in order to detect ultrasonic pulses with different frequencies or codes that are transmitted from one or more master units-(200) and slave units-(300) which transmit the different frequencies or codes.

3. (Currently Amended) An identification tag according to claim 1, characterised in that the receiver unit-(180) is connected to a control unit-(160).

4. (Cancelled)

5. (Currently Amended) An identification tag-(100) according to claim 3-~~or~~4, wherein ~~characterised in that~~ the control unit-(160) is arranged to cause the radio transmitter to transmit a radio signals in response to the identification tag's-(100) calculating unit-(165) having calculated transit time differences for the received ultrasonic pulses.

6. (Currently Amended) An identification tag-(100) according to claim 5, ~~characterised in that it further comprises~~ comprising a sabotage unit-(110) connected with the control unit-(160) for detecting any attempt to remove and/or open the identification tag-(100), and where, after such detection, the control unit-(160) is

adapted to add such additional information to ~~the a~~ radio signal transmitted from the identification tag-(100).

7. (Currently Amended) An identification tag-(100) according to claim 4~~3~~, characterised in that it further comprises a radio receiver-(175) connected to the control unit-(160) for receiving information on which room or area it is located in, with the result that the identification tag-(100) does not need to listen continuously for ultrasonic signals.

8. (Currently Amended) A system-(400) for position determination of at least one identification tag-(100),

~~characterised in that it comprises~~comprising:

- a central processing unit,

- at least one stationary master unit-(200), with an ultrasonic transducer-(265) for transmitting ultrasonic signals in the form of ultrasonic pulses and a receiver unit (270) for receiving instructions from ~~at least one~~the central processing unit-(410),

- at least one identification tag-(100) according to claim 4-~~1~~1 for transmitting the identification tag's-(100) ~~identification identity,~~ as well as measured transit time differences for received ultrasonic pulses, together with any additional information,

- a network-(215) interconnecting the at least one stationary master units-(200) with the central processing unit-(410) for transfer of instructions,

- means in the central processing unit-(410) for calling up identification tags-(100) as well as detecting, collecting and interpreting received radio signals from the identification tags-(100), and

- processing means in the central processing unit-(410) for determining the position of the identification tags-(100).

9. (Currently Amended) A system according to claim 8,

~~characterised in that the system further comprises~~comprising at least one stationary slave unit-(300) with an ultrasonic transducer for transmitting ultrasonic signals in the form of ultrasonic pulses.

10. (Currently Amended) A system according to claim 9, wherein the number of stationary master units (200) is one, and the number of stationary slave units (300) is at least three.

11. (Currently Amended) A system according to claims 8 or 9, wherein characterised in that a network (215) interconnects the stationary master units (200) and the stationary slave units (300) for transferring a synchronisation message from the master unit (200).

12. (Currently Amended) A system according to claims 8 or 9, wherein characterised in that the stationary master units (200) and the stationary slave units (300) each transmits ultrasonic waves on their own frequency or with their own coding.

13. (Currently Amended) A system according to claim 8, wherein characterised in that the stationary master units (200) comprises means (210, 230) for transmitting a synchronisation message to all stationary slave units (300) with which it is connected.

14. (Currently Amended) A system according to claim 8, wherein characterised in that the connection between network interconnecting the stationary master units (200) and the central processing unit (410) is based on radio waves.

15. (Currently Amended) A system according to claim 8, wherein characterised in that the connection between network interconnecting the stationary master units (200) and the central processing unit (410) is wire-based.

16. (Currently Amended) A system according to claim 8, wherein characterised in that the stationary slave units (300) comprises means for receiving a synchronisation message from a stationary master unit (200) with which it is in network connection.

17. (Currently Amended) A system according to claim ~~8~~ or ~~16~~ 9, wherein characterised in that the network ~~connection connecting-interconnecting the~~ stationary master units (200) and the stationary slave units (300) is radio-based.

18. (Currently Amended) A system according to claims ~~8~~ or ~~16~~ 9, wherein characterised in that the network ~~connection connecting-interconnecting the~~ stationary master units (200) and the stationary slave units (300) is wire-based.

19. (Currently Amended) A method for position determination of one or more identification tags (100) in a room in a building or areas ~~that require to be monitored, comprising the steps of:~~
characterised in that the method comprises:

- a) transmitting a ~~radio~~ message from a central processing unit (410) to at least one stationary master units (200),
- b) transmitting a synchronisation message from the stationary master units (200) to at least one stationary slave units (300),
- c) transmitting ultrasonic pulses synchronously from the stationary master units (200) and the stationary slave units (300),
- d) receiving the ultrasonic pulses ~~for the at an~~ identification tags (100) according to ~~claim 1~~,
- e) calculating arrival times for received ultrasonic pulses in the identification tag (100),
- f) transmitting radio signals containing information concerning arrival times for received ultrasonic pulses together with identification of the identification tag (100) to a central processing unit (410),
- g) calculating the position of the specific identification tag (100) in the central processing unit (410) on the basis of received identification and transit time differences transmitted from the identification tag (100), together with knowledge of the position of each individual stationary master unit (200) and stationary slave unit (300) in every room or area.

20. (Currently Amended) A method according to claim 19, wherein characterised in that the synchronisation message contains information on which frequency or code has to be employed.

21. (Currently Amended) A method according to claim 19, comprising the step of characterised in that the stationary master units (200) and stationary slave units (300) each transmitting on their its own code.

22. (Currently Amended) A method according to claim 19, comprising the step of characterised in that ~~initiating~~ the radio-message from the central processing unit (410) to the stationary master units (200) is ~~initiated~~ by a user requesting an update of positions via a user interface on the central processing unit (410).

23. (Currently Amended) A method according to claim 19, comprising the step of characterised in that ~~initiating~~ the radio-message from the central processing unit (410) to the stationary master unit (200) is ~~initiated~~ by an identification tag (100) transmitting a request via ~~radio~~-signals to the central processing unit (410).

24. (Currently Amended) A method according to claim 19, wherein characterised in that ~~each~~ identification tags (100) ~~containing that contains~~ a radio receiver (175) in addition to an ultrasonic receiver (180) ~~will listens to radio signals transmitted from the central processing unit to the master units and switches on the its~~ ultrasonic receiver (180) only when ~~it determines by said listening that the master units and the slave units are to transmit ultrasonic pulses in the an area where the tag is located they are called up by listening to radio signals transmitted from the stationary calculating unit (410) to the master units.~~

25. (Currently Amended) A method according to claim 19, wherein characterised in that the identification tag (100) transmits a request for initiation of a position determination update to the central processing unit (410) when an attempt is made to open or move it.

26. (New) An identification tag as in claim 1 wherein the radio transmitter is further arranged to transmit a transit time radio signal comprising information about one of said calculated transit time differences.

27. (New) An identification tag as in claim 1 further comprising a radio receiver wherein the tag is arranged to listen for ultrasonic pulses only for a predetermined period after receiving a radio signal transmitted in the room or area in which it is located.

28. (New) A method as in claim 19 wherein a master unit is located in each of a plurality of rooms and wherein the steps of the method are repeated for each one of said plurality of rooms in turn until the position of the tag is determined.

29. (New) A central processing unit for use in a tag-position determination system arranged to receive ultrasound transit time difference information from a tag and to determine the tag's position therefrom.